



# Forest Treatment Prescriptions

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# **What Considerations go into the Silvicultural Prescription?**

1. Project Objective
2. Type of Vegetation
3. Stand Conditions / Health
4. Natural Range of Variability
5. Basic Tree Biology



# Thinning Prescriptions

A written prescription identifies the desired condition and the type of treatment.

- Designates which trees to cut or leave
- Characteristics of cut or leave trees
  - Tree Health
  - Tree Vigor
  - Physical damages



# Thinning Prescriptions

- Spacing requirements (crown spacing or bole spacing)
- Free Thinning
- Spatial Distribution
  - Group definitions and target sizes
  - Remnant evidence and presettlement considerations



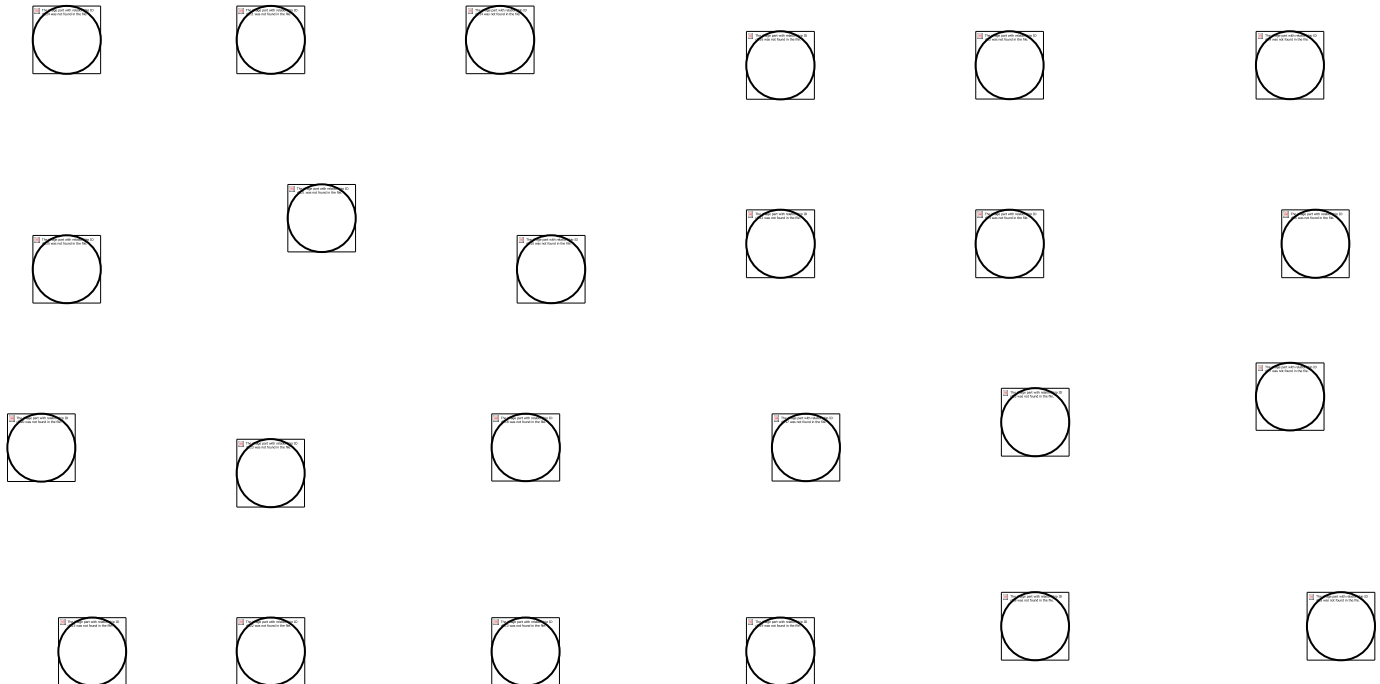
# Implementation of Thinning Prescriptions Con't

how it will be applied on the ground:

- LTM = Leave Tree Mark
- CTM = Cut Tree Mark
- Dx D = Designation by Description
- Dx P = Designation by Prescription

# Even Spatial Distribution: A Typical Spacing Prescription

25 x 25 Spacing



# DxD

- **Leave tree selection**
  - All trees > 16" dbh.
  - In all PP 5" to 16" dbh thin from below creating an average spacing of 34' X 34' taking only PP into consideration in the spacing. Ignore PJ in the spacing. The spacing can vary from 24' to 44', but the average spacing has to be 34'.
- Only consider leaving PP 3' tall to 4.9" dbh when they are needed as leave trees when an average spacing of 34' X 34' cannot be left in PP > 4.9". Leave them at a 27' spacing from other leave PP. Do not leave any pinyon pine and junipers, except alligator juniper, between 3' tall and 4.9" dbh and drc, respectively.
- Trees that are not to be considered in the leave tree spacing:
  - 1. Hardwood trees 2. PJ
- Trees that are not to be cut: 1. Hardwood trees 2. PP > 16" dbh 3. Pinyon pine > 4.9" dbh and Utah juniper > 4.9" drc 4. Alligator juniper.

# LTM

**Marking Guide:** Conduct an intermediate cut in all conifers  $\geq 5''$  dbh to an average 20' crown spacing, varying from 10' to 25'. Take into consideration all conifers  $\geq 3'$  tall in the leave tree spacing. Leave all conifers  $> 16''$  except in the following circumstances: 1. They are anticipated to die within the next 5 years and they are not needed for snag recruitment. 2. They have a mistletoe rating  $> 3$ . 3. They act as ladder fuels.

In the 5" to 16" conifers, strive to leave healthy conifers. Leave PP with a DMR  $< 3$  and only mistletoe free SWP and DF. In severely dwarf mistletoe infected conifer areas, gamble oak and aspen can be considered in the spacing to supplement the residual conifers that are left in order to try to maintain an average crown spacing of 20'.

The species preference for leave conifers  $> 3'$  tall is: Southwestern white pine; Ponderosa pine; Douglas-fir  
White fir; Blue spruce

Wherever you find 2 to 4 healthy conifers other than PP already growing near each other, try to leave them together as representing one tree.

Only leave conifers between 3' tall and 4.9" dbh when there are not enough conifers  $\geq 5''$  dbh to leave. Leave them at an average 20' crown spacing, varying from 10' to 25', from other trees. Only leave mistletoe free conifers of this size range.

Oak and aspen will be left and considered in spacing guide to other conifers that may be selected as leave trees.





**LTM Even Spacing – Thin From Below**





**LTM – Free Thin**





**DxD – Intermediate Thin**



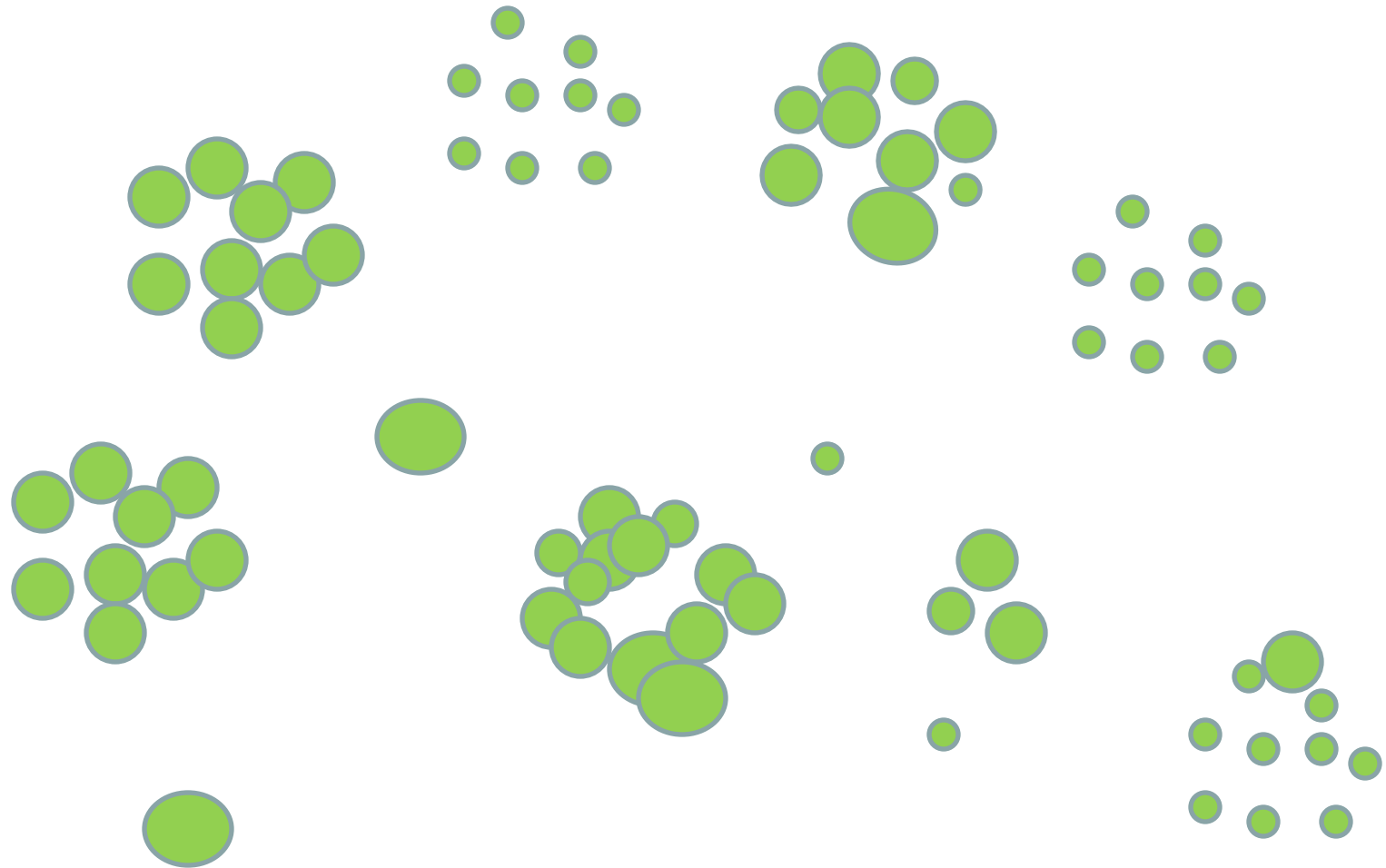
# Mineral A Unit 15

Thin to 50 BA

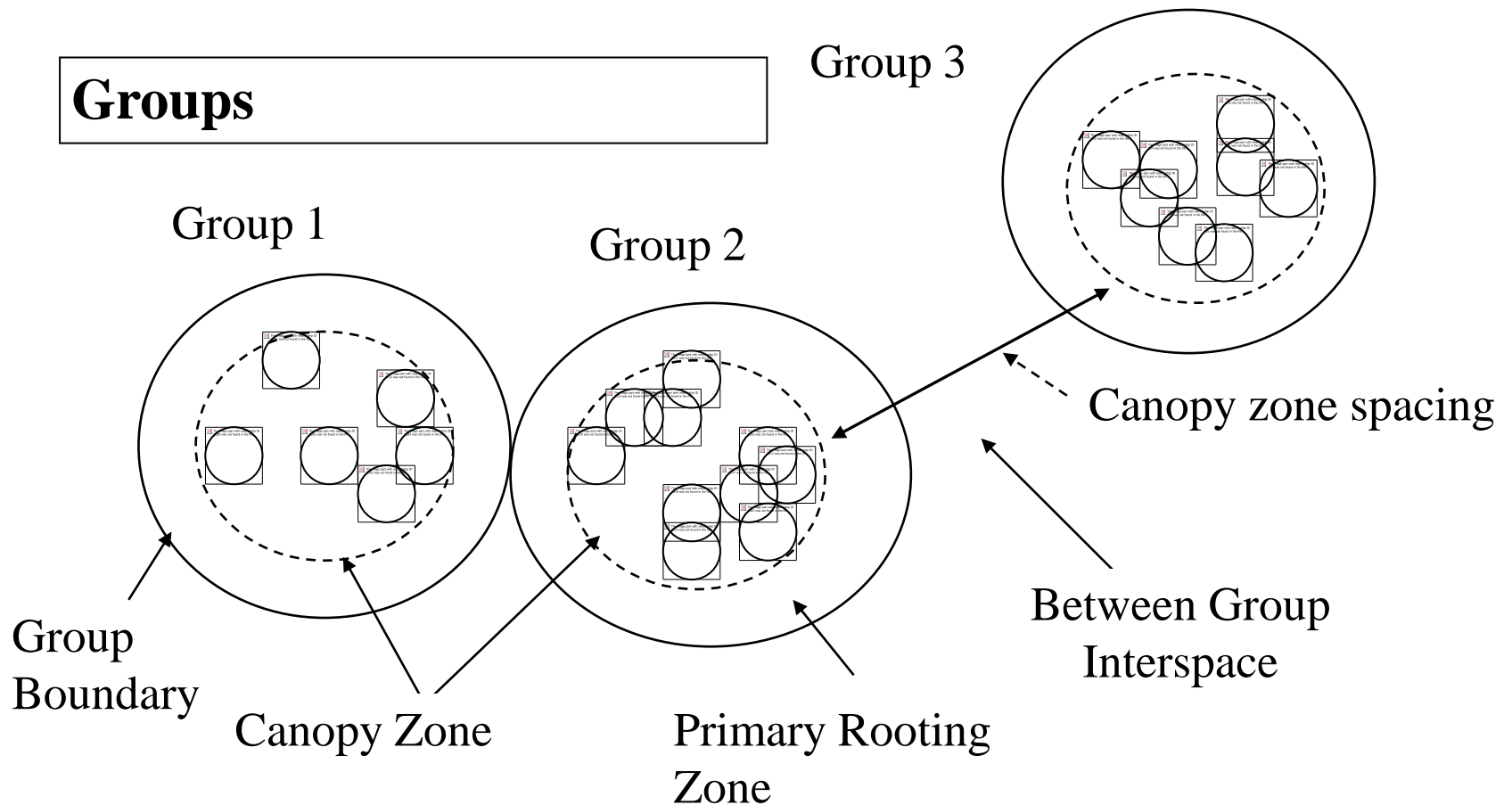




# Spatial Distribution - Groups



# Spatial Arrangement





# Group LTM

**Marking Guide:** In the 3' tall to 15.9" conifers, strive to leave healthy, quality trees. The priority is to create Groups of 2 to 5 trees. Groups will be designated leave trees with less than 5' of crown spacing. Spacing from each Group will be 20' from crowns, spacing may vary from 15' to 25'. Leave PP with a DMR < 3 and only mistletoe free SWP and DF.

Single Tree – Where creating clumps is undesirable or impossible, use a LTM in conifers  $\geq 3'$  tall to 15.9" dbh to an average 20' crown spacing, varying from 10' to 25'. Take into consideration all conifers  $\geq 3'$  tall in the leave tree spacing.

Trees over 15.9" dbh - Leave all conifers  $\geq 16"$  dbh except in the following circumstances: 1. They are anticipated to die within the next 5 years and they are not needed for snag recruitment. 2. They have a mistletoe rating > 3 and removing them will reduce the spread of mistletoe. 3. They act as ladder fuels.

Wherever you find healthy gamble oak or aspen, try to release them by removing the conifers around them. Minimize damage to aspen and oak by marking single conifers within the group or conifers that would cause damage to the desired leave trees if harvested.

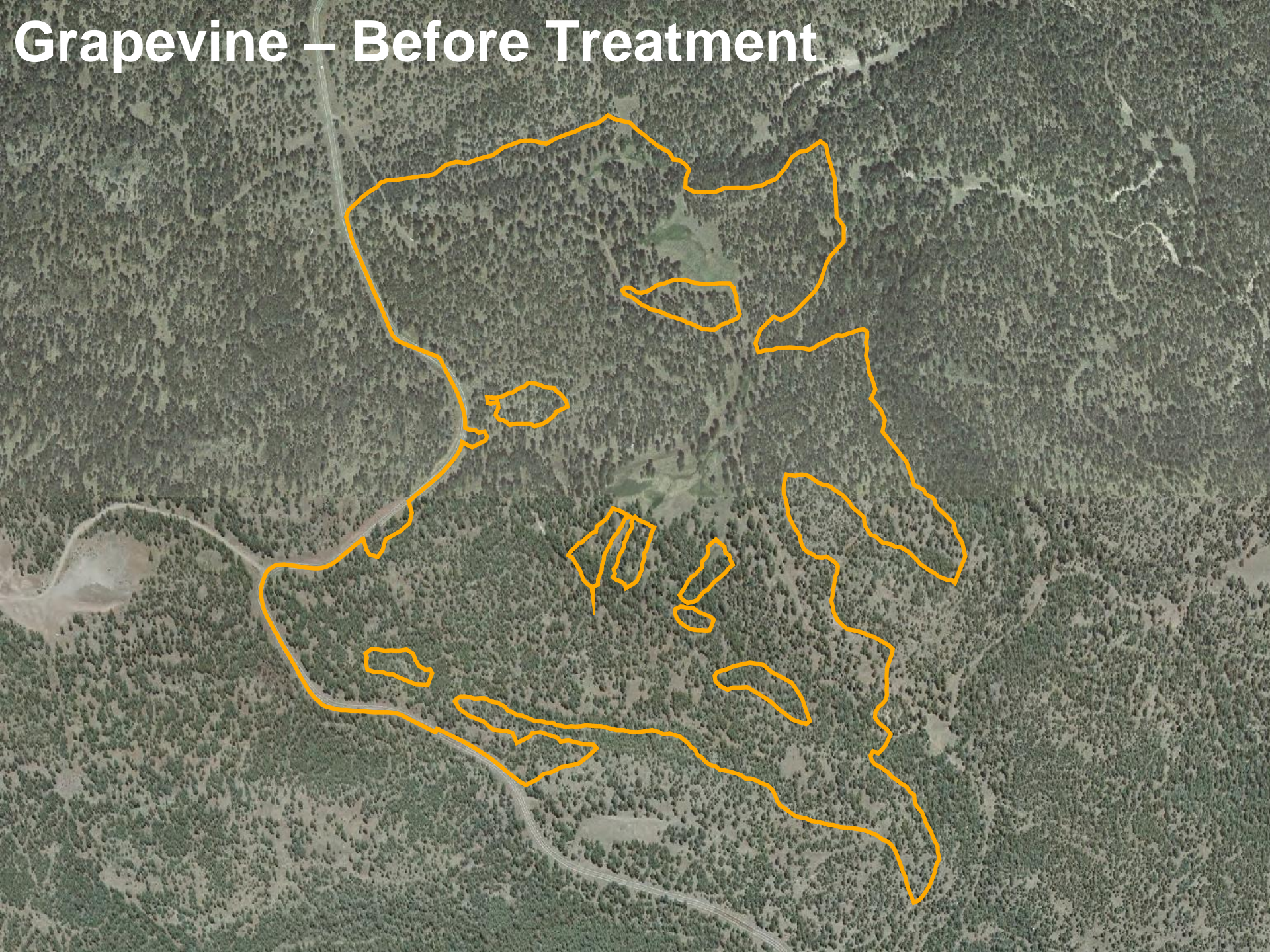
Only leave conifers between 3' tall and 4.9" dbh when there are not enough conifers  $\geq 5"$  dbh to leave. Leave them as part of a clump following the spacing guide above or at an average 20' crown spacing, varying from 10' to 25', from other trees. Only leave mistletoe free conifers of this size range. Oak and aspen seedlings and saplings can be considered as leave trees only when there are no other conifers that can be considered as leave trees. Designate leave trees with orange paint.

# DxD

For all PP between 3' tall and 15.9" dbh, first look for groups of trees > 4.9" and leave 4 to 6 trees in the group trying to space them 10' to 14' apart bole spacing. If less than 4 trees are in the group, then supplement the group by leaving enough trees 3' tall to 4.9" dbh to bring the number up to 4 trees in the group. These groups should be spaced 30' to 50' apart from center of one group to the next. Take all PP into consideration in the spacing and creating of groups. Also, ignore all other species in the leave tree spacing. If there is not a group of trees that can be left within 50' of another group of trees, then leave an opening.

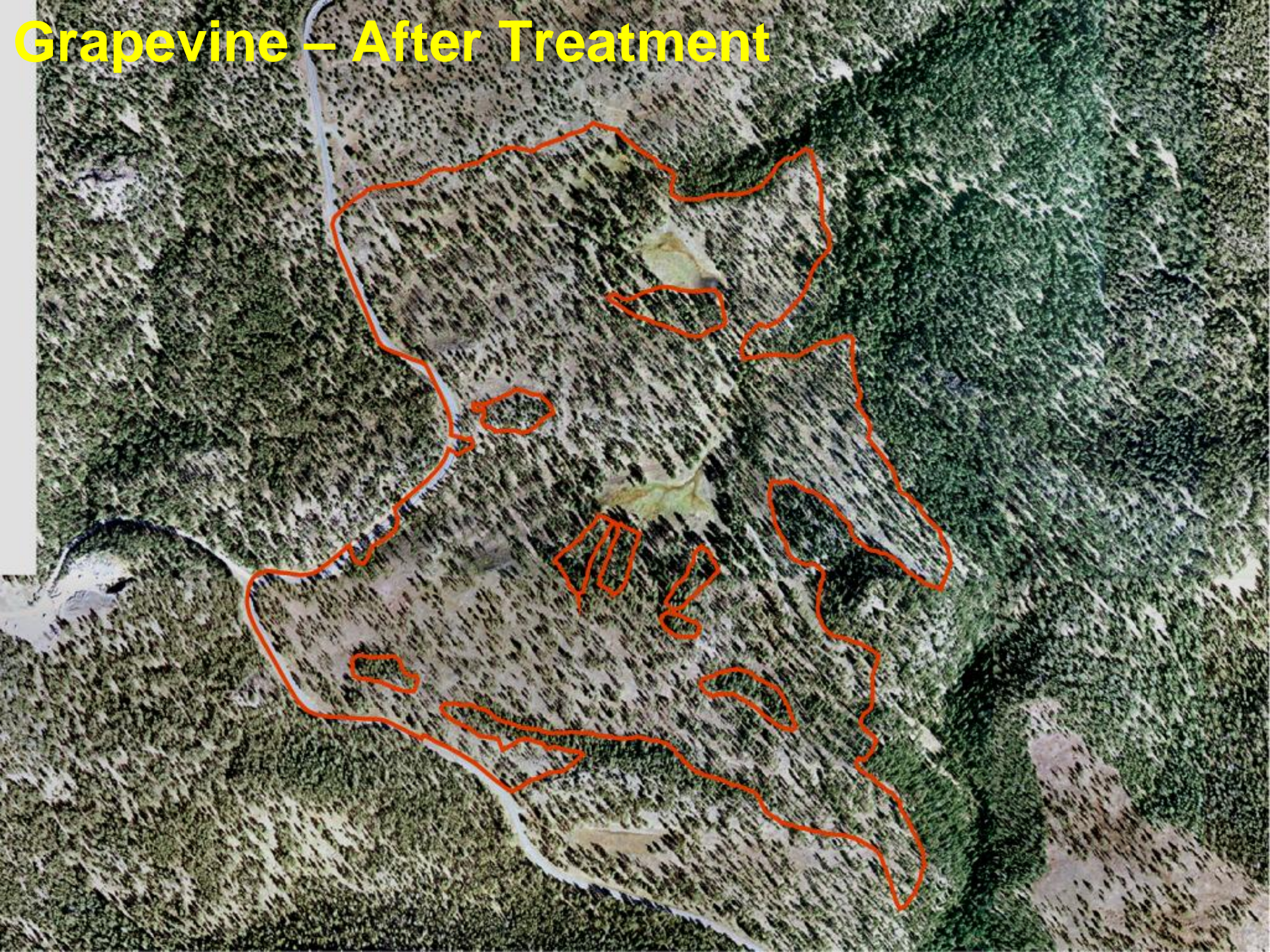


# Grapevine – Before Treatment





# Grapevine – After Treatment





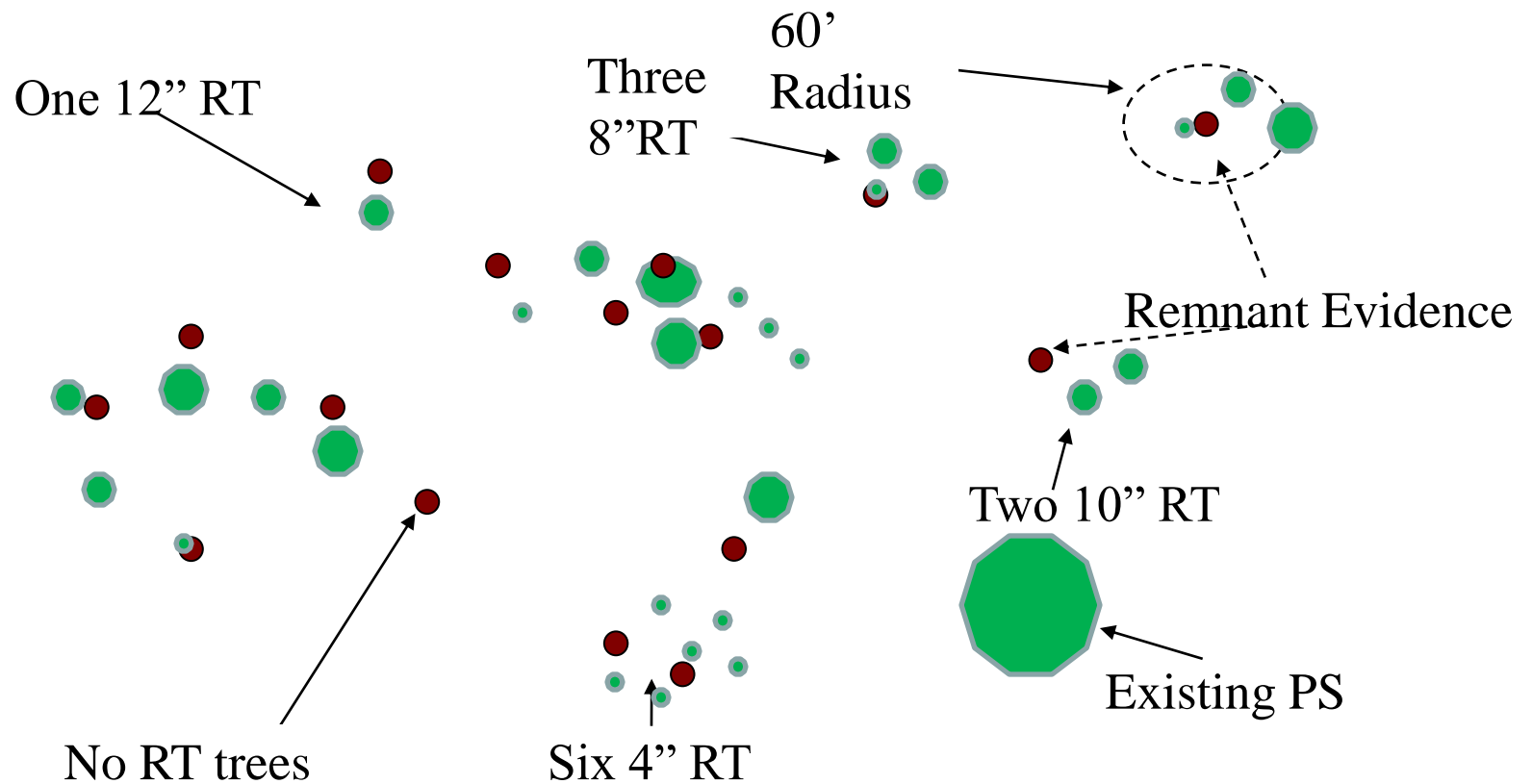
# Before Treatment



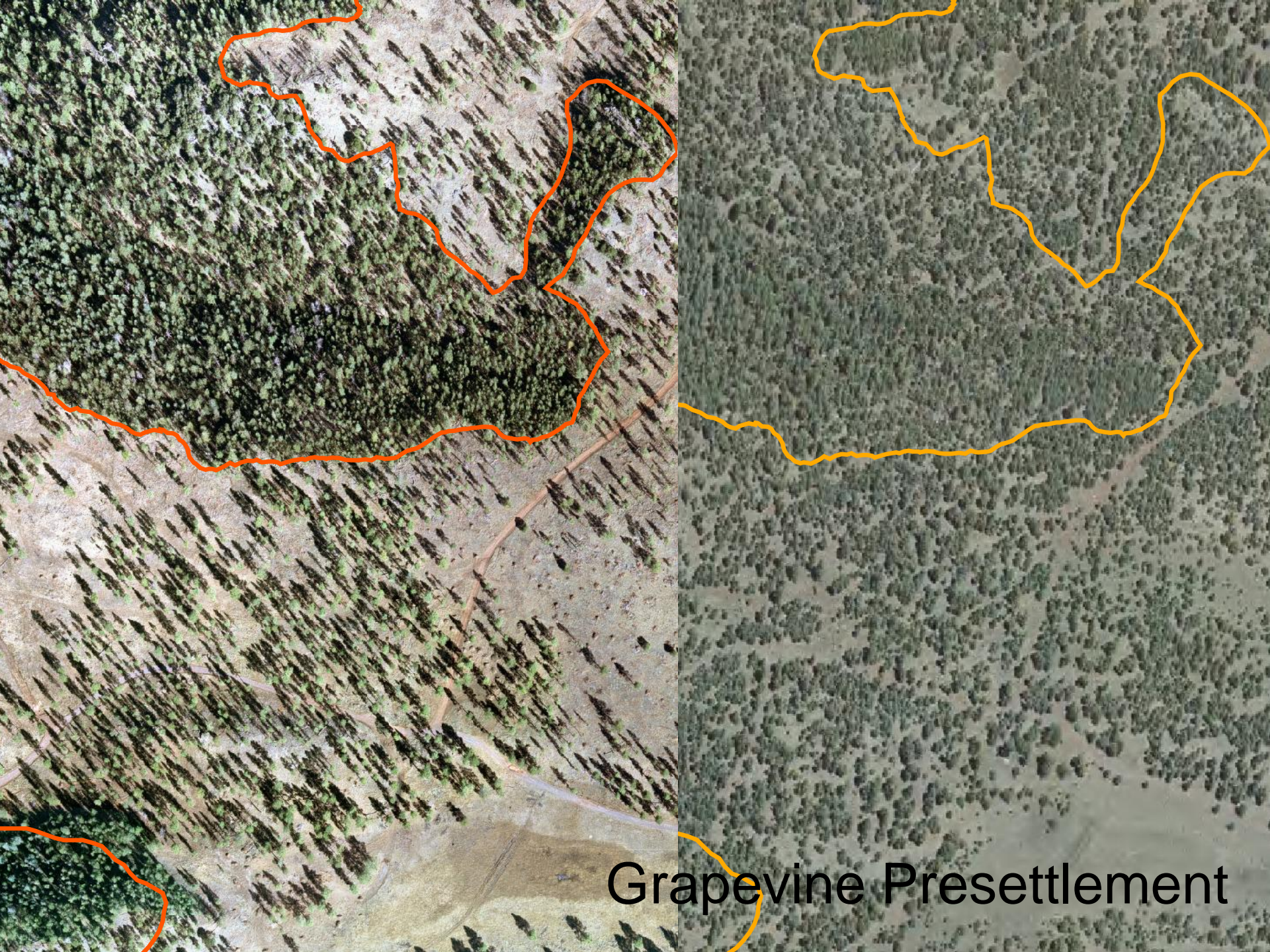
# After Treatment



# Restoration based on Remnant Evidence







Grapevine Presettlement





Grapevine Presettlement – Before Treatment





Grapevine Presettlement – After Treatment



# Spatial Distribution Facilitates Implementation

Proper location of slash piles will reduce the amount of fire related mortality to the residual trees, place piles out from the dripline, away from boles of trees.

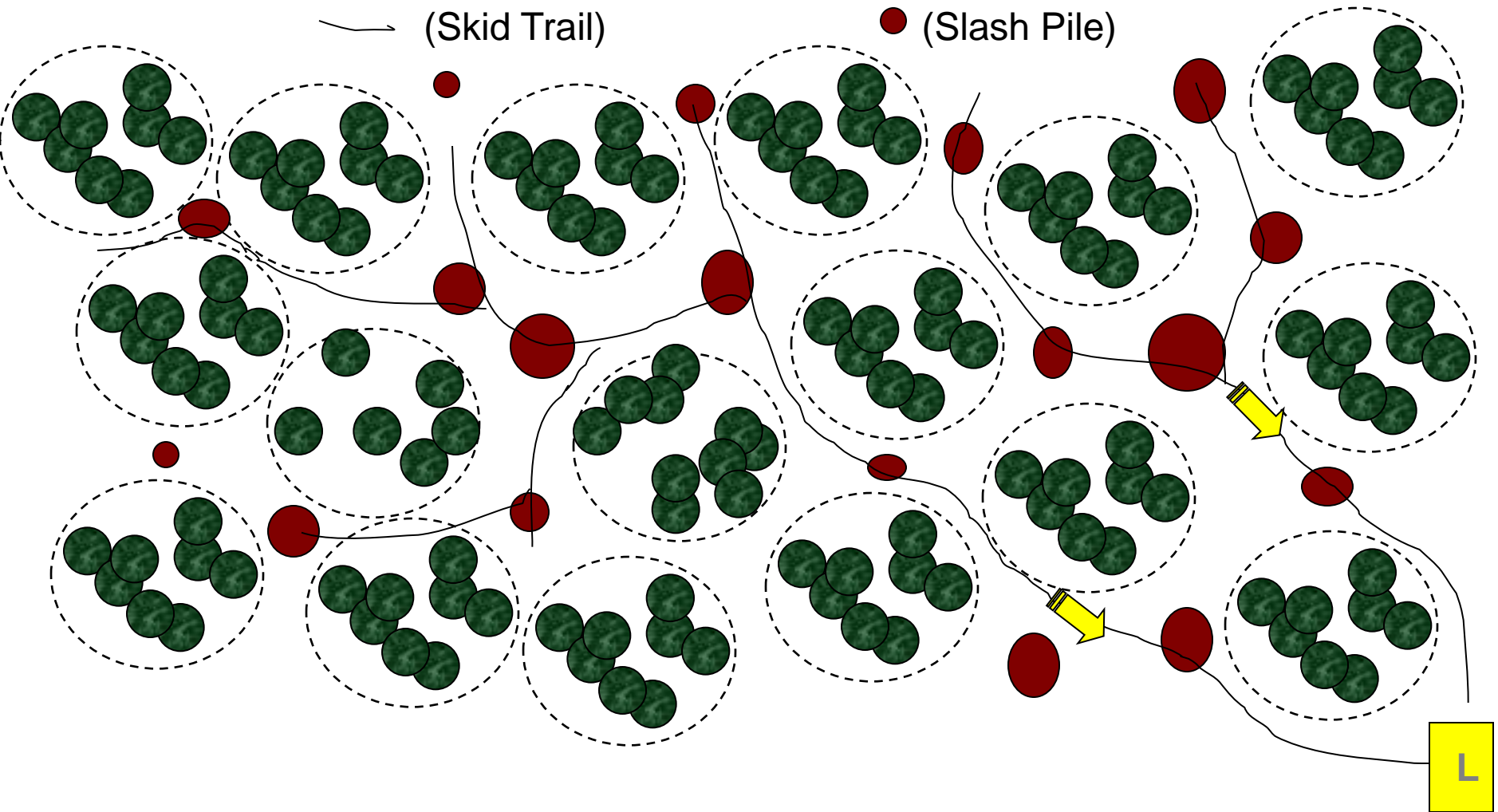
Skid trails avoid groups and clumps and utilize created openings.



Blue Sky  
Above the  
Pile



# Feller-buncher, Skid Trail and Slash Pile Locations





**Skid trails avoid  
groups utilizing  
created openings**







**Skid trail worked outside and around reserve tree groups and clumps**



# Keep It Simple

